WHAT IS CLAIMED IS:

1. A method of potentiating the effects of a type I IFN on a target cell population comprising increasing the number of functional IFNAR2c receptor chains on the surface of modified cells within the target cell population and then exposing the modified cells to a therapeutically effective amount of a type I IFN.

2. A method according to claim 1, wherein the effects comprise anti-growth effects.

3. A method according to claim 2, wherein the number of functional IFNAR2c receptor chains on the surface of modified cells is increased by up-regulation of gene expression of an IFNAR2c gene.

4. A method according to claim 3, wherein the up-regulation of gene expression of the IFNAR2c gene is accomplished by introducing an exogenous gene encoding the IFNAR2c polypeptide into the modified cells.

5. A method according to claim 3, wherein the up-regulation of gene expression of the IFNAR2c gene is accomplished by exposing modified cells of the target cell population to a small molecule which stimulates the promoter of the IFNAR2c gene.

6. A method according to claim 2, wherein the type I IFN is a type I α-IFN, a type I β-IFN, a type I ω-IFN or a consensus type I IFN.

7. A method according to claim 2, wherein the cells of the target cell population are cells involved in a proliferative cell condition.

8. A method according to claim 7, wherein the cells involved in a proliferative cell condition are cancer cells.

9. A method according to claim 7, wherein the cells involved in a proliferative cell condition are smooth muscle cells involved in restenosis.

10. A method according to claim 4, wherein at least one exogenous gene encoding an IFNAR2c polypeptide is delivered to modified cells using a viral vector.

11. A method according to claim 10, wherein the viral vector is derived from a retrovirus or an adenovirus.

12. A method according to claim 2, wherein the anti-growth effect of the type I IFN on the target cell population is increased by at least 5%.

13. A method according to claim 2, wherein the anti-growth effect of the type I IFN is increased by at least 10%.

14. A method according to claim 10, wherein the exogenous gene encoding an IFNAR2c polypeptide and a gene encoding a type I IFN are delivered to the target cell population as part of the same viral vector.

15. A method potentiating the anti-growth effects of an effector molecule on a target cell population comprising tumor cells, comprising increasing the number of functional effector molecule receptors on the surface of modified cells within the target cell population and then exposing the modified cells to a therapeutically effective amount of a the effector molecule.

16. A method according to claim 15, wherein the effector molecule is a growth factor or an interleukin.

17. A method according to claim 15 wherein the number of effector molecule receptors is increased by the up-regulation of gene expression of a gene encoding the effector molecule receptor.

18. A method according to claim 17, wherein up-regulation of gene expression of the gene encoding the effector molecule receptor is accomplished by the introduction into the modified cells of an exogenous gene encoding the effector molecule receptor.

19. A method according to claim 17, wherein up-regulation of gene expression of the gene encoding the effector molecule receptor is accomplished by exposing modified cells of the target cell population to a small molecule which stimulates the promoter of the gene encoding the effector molecule receptor.

20. A method according to claim 15, wherein the anti-growth effect of the effector molecule on the target cell population is increased by at least 10%.

21. A method of potentiating the effects of a type I IFN on a target cell population comprising increasing the number of functional IFNAR1 receptor chains on the surface of modified cells within the target cell population and then exposing the modified cells to a therapeutically effective amount of a type I IFN.